THE CENTRAL AFRICAN JOURNAL OF MEDICINE

Vol. 55, Nos. 1/4 January/April 2009

CONTENTS

The prices people pay for medicines in Zimbabwe

*P GAVAZA, **T SIMOYI, ***B MAKUNIKE, ****CC MAPONGA

Abstract

Objectives: To collect, analyse and compare prices of medicines in different sectors and parts of the country and to compare them with the medicine prices in other countries.
Design: A prospective cross sectional study.
Setting: Pharmacy outlets in Zimbabwe comprising 27 retail pharmacies, 23 dispensing doctors, eight public hospital pharmacies and seven municipal clinics.
Main Outcome Measures: Median price ratios, 25th percentiles and 75th percentiles.
Results: Innovator brands in the private sector were priced 10 times the International References Prices (IRP) and more than three times the price of generic medicines. Dispensing doctors were charging the highest prices for medicines and the public sector had the least prices. The national procurement agency, NatPharm, procured medicines at prices slightly below the Management Sciences for Health (MSH) prices. Prices of medicines in the public sector were higher than average prices for medicines from seven other African countries.
Conclusion: Medicine prices in Zimbabwe are high, a scenario that may compromise affordability and accessibility to medicines especially by the poor. Urgent steps are needed to reduce the level and effect of the high prices on the population, especially the poor.

Cent Afr J Med 2009;55(1/4) 14-19

Introduction

People need drugs to maintain health and for relief from pain, suffering and ill health. But drugs have to be bought. They have to be bought in foreign currency, including a part of those produced locally. They are expensive and the price is going up every day.[1] In many developing countries, medicines are unaffordable to the majority of people. The cost of health care and particularly the cost of prescription medicines presents major challenges to public expenditure policies.[2]

Medicine costs account for a large proportion of households', insurers and governments' health spending in many African countries, including Zimbabwe. It has been estimated that up to 50% of the population in Africa and Asia are unable to obtain necessary medicines.[3] The price of medicines is one of the most important obstacles to access. The cost of pharmaceuticals in the overall budgets of insurers and governments continues to be targeted and often become controversial issues.[4] Poverty, declining national economy, foreign currency shortages, low insurance coverage and the high HIV/AIDS disease

*University of Texas at Austin
College of Pharmacy, Pharmacy Practice and Administration Division
Room PHR3.209, Austin, TX 78712-0127, USA
**Ministry of Health and Child Welfare
Pharmacy Department
Kaguvi Building, 4th Floor
Causeway, Harare, Zimbabwe
***World Health Organization,Parirenyatwa Annex
Mazowe Road, Harare, Zimbabwe
****School of Pharmacy
University of Zimbabwe
P O Box A178, Avondale
Harare, Zimbabwe

Correspondence to:

*Dr CC Maponga
School of Pharmacy
University of Zimbabwe
P O Box A178
Avondale, Harare
E-mail: cmaponga@medsch.uz.ac.zw*

burden have further compounded the problem of access to affordable medicines by the population, especially the poor. The above factors have made it difficult for the Zimbabwe National Drug Policy to realize its goal of having 90% or more of essential drugs available in all public health facilities in the country. Public sector surveys conducted in Zimbabwe over the years show that none of the levels of health facilities in the country achieved the 90% overall drug availability target.[5]

The formulation of well informed and appropriate pricing policies requires the availability of reliable information on medicine prices. While Zimbabwe and many other developing countries have policies that affect medicine prices, lack of accurate information on the actual price of medicines paid by patients makes it difficult to assess how well the pricing policies are working. This study was conducted to analyse and compare the prices of medicines in the different parts of the health sector in the country and to compare them with those in other African countries.

Experimental.

A prospective study was conducted using the WHO and Health Action International (HAI) methodology as stipulated in the manual "Medicine prices: a new approach to measurement".[6] The study was conducted as part of the broader Zimbabwe Medicines Survey 2004[7] and was conducted concurrently with similar studies in seven other African countries during the last quarter of 2004.

The standardised WHO/HAI questionnaire (data collection form) was used to collect medicines prices information from a sample of health institutions in the country. The first section included four questions covering the name of health facility, name of town or district, type of health facility, type of price (i.e., procurement or price the patient pays). The second section was the medicine price data collection form which was designed to collect data on the prices patients paid for medicines. The form had a listing of 42 medicines including 29 on the WHO/HAI standard list. The use of this standard list of medicines allowed for international comparison of the study results. In addition to medicines in the core list, a supplementary list of 13 medicines was added. In developing the supplementary list consideration was given to the burden of disease, local production and availability of fixed dose combination products. The substances added were those widely used in the country and were taken from the Essential Drugs List of Zimbabwe (EDLIZ).[8] To facilitate national and international comparison of results, only medicines with Management Sciences for Health (MSH) reference prices were included in the final list (Table I) of medicines surveyed.

Table I: Core and supplementary medicines used.

No.	Medicine Name	Medicine Strength	Dosage Form	Target Pack size	Core List (Yes/No)
1	Aciclovir	200 mg	cap/tab	25	yes
2	Amitriptyline	25 mg	cap/tab	100	yes
3	Amoxicillin caps/tab	250 mg	cap/tab	21	yes
4	Amoxicillin suspension	125 mg	millilitre	100	no
5	Artesunate	100 mg	cap/tab	20	yes
6	Atenolol	50 mg	cap/tab	60	yes
7	Beclometasone inhaler	0.05 mg/dose	dose	200	yes
8	Betamethasone 1% cream	0.01	gram	50	no
9	Captopril	25 mg	cap/tab	60	yes
10	Carbamazepine	200 mg	cap/tab	150	yes
11	Ceftriaxone injection	1 g/vial	gram	1	yes
12	Chloroquine	150 mg base	tab	1000	no
13	Cimetidine	400 mg	tab	100	no
14	Ciprofloxacin	500 mg	cap/tab	1	yes
15	Co-trimoxazole suspension	8+40 mg/ml	millilitre	70	yes
16	Cotrimoxazole tab	80+400 mg	tab	1000	no
17	Diazepam	5 mg	cap/tab	100	yes
18	Diclofenac	25 mg	cap/tab	100	yes
19	Doxycycline	100 mg	cap/tab	500	no
20	Erythromycin	250 mg	cap/tab	1000	no
21	Fluconazole	200 mg	cap/tab	30	yes
22	Fluoxetine	20 mg	cap/tab	30	yes
23	Fluphenazine injection	25 mg/ml	millilitre	1	yes
24	Glibenclamide	5 mg	cap/tab	60	yes
25	Hydrochlorothiazide	25 mg	cap/tab	30	yes
26	Ibuprofen	200 mg	cap/tab	500	no
27	Indinavir	400 mg	cap/tab	180	yes
28	Indomethacin	25 mg	cap/tab	1000	no
29	Losartan	50 mg	cap/tab	30	yes
30	Metformin	500 mg	cap/tab	100	yes
31	Metronidazole	200 mg	tab	1000	no
32	Miconazole oral gel	2% cream	gram	40	no
33	Nevirapine	200 mg	cap/tab	60	yes
34	Nifedipine Retard	20 mg	tab	100	yes
35	Omeprazole	20 mg	cap/tab	30	yes
36	Phenytoin	100 mg	cap/tab	100	yes
37	Prednisolone	5 mg	tab	1000	no
38	Ranitidine	150 mg	cap/tab	60	yes
39	Salbutamol inhaler	0.1 mg/dose	dose	200	yes
40	Stavudine+Lamuvudine+Nevirapine	40+150+200	cap/tab	60	no
41	Sulfadoxine-pyrimethamine	500+25 mg	cap/tab	3	yes
42	Zidovudine	100 mg	cap/tab	150	yes

For each medicine, three products were monitored, where available, including:

1) The innovator brand: the product made by the innovator;

2) Most sold generic equivalent: comprised the generic product that is most sold in the country. This was obtained prior to the data collection through an initial (national) survey of the major wholesalers, private retail pharmacies and public sector institutions in Zimbabwe; and

3) Lowest price generic equivalent: the generic equivalent medicine with the least price. This was identified at each institution visited. The lowest price generic equivalent identified in each pharmacy did not need to be the same for all institutions but could vary from one institution to the other.

For each medicine, data collectors ascertained if the medicine was available, and then recorded the pack size found and its price. This information was later used to calculate the unit price for each of the medicines found.

A pilot study was undertaken during a weeklong field practice. Data collection was completed in four weeks (September to October 2004). Price data was collected from public sector (provincial and central hospitals and municipal clinics) and private sector (private retail pharmacies and dispensing doctors) institutions. The study was conducted in five randomly selected provinces of the 10 provinces in the country, namely Harare (including Chitungwiza), Masvingo, Bulawayo, Manicaland and Mashonaland West provinces. The study used the sampling method described in the WHO/HAI manual for selecting a representative number of health facilities and pharmacies. All the central and provincial hospitals in the selected geographic areas were surveyed. Retail pharmacies and dispensing doctors were randomly selected using the most recent Medicines Control Authority of Zimbabwe (MCAZ)[9] lists. Municipal clinics were conveniently selected during data collection as no accurate lists were available before going to the field. A total of 25 private retail pharmacies, eight public (central and provincial hospitals) sector health facilities, 25 dispensing doctors and seven municipal clinics were planned to participate in the study.

The study also collected secondary information on the national pharmaceutical situation in the country and procurement prices (tender prices) from the national government procurement agency, NatPharm.

Data were entered and analysed using a computerised WHO/HAI International Medicine Price Workbook, which is a special application for Microsoft Excel. Summary measures of the medicine prices found during the survey were expressed as ratios relative to the MSH 2003 price list which was selected as a standard set of reference prices. The use of an international reference price allowed for standardised international comparison. Comparisons were done in local currency.

The study also compared the national prices in Zimbabwe with prices in other countries. Prices in local currency were converted to US dollars for comparison. Findings on medicines prices in this study are expressed mostly as "median price ratios" or MPRs. The MPR is a ratio of the local price, in US dollars, over an international reference price (also in US dollars). The reference price was used as an external standard for evaluating local prices. To obtain an MPR for a local medicine, the Excel Workbook calculated the median among all the prices gathered during the field survey for that medicine in a sector. This is the "typical" local price charged to patients in that sector. The Workbook converted this typical local price into US dollars, and then divided that amount by the reference price for the same medicine. The resulting MPR shows how many times higher or lower the local price is, compared to the external international standard price. Median price ratios for a particular drug or sector were calculated and reported only in cases where the drug was found in at least four institutions.

Results

All the targeted pharmacy institutions (i.e., 27 private retail pharmacies, 23 dispensing doctors eight public hospitals and seven municipal clinics) were surveyed in the study. The prices of innovator brand products in the retail pharmacy sector were found to be 10 times the MSH international reference prices (IRP) (Table II). Dispensing doctors had the highest generic medicine prices which were over eight times the IRP and approximately twice the patient prices in the other three sectors surveyed. Generic medicine prices in the private retail sector were one third of the prices for the innovator brands (Table II).

Table II: Medicine prices across sectors.

Sector	Median Price Ratios		
	Innovator Brand	Most Sold Generic	Lowest Price Generic
Retail pharmacy sector	9.82	3.64	3.35
Public hospitals	-	2.59	2.57
Dispensing doctors	-	7.86	7.86
Municipal clinics	-	4.52	4.05
Public procurement prices	-	0.91	0.99

Pyrimethamine + sulfadoxine, diazepam, indomethacin and chloroquine had very high prices. In the dispensing doctors sector, they were selling for at least 20 times the IRP. Prices of a few medicines were below the IRP in both the private and dispensing doctors sectors (e.g., Lorsatan and Betamethasone 1% cream).

Public sector hospitals sold medicines at prices 226% and 169% higher than the Natpharm procurement prices for the least priced generic (LPG) medicines respectively (Table III).

Table III: Price ratios and summary ratios in the public sector.

	Procurement Sector MPR (n=2)	Public Sector MPR (n=8)	No. Of medicines in both sectors	Ratio private to public
Most sold generic (MSG) equivalent	0.94	3.06	10	325.5%
Lowest price generic (LPG)	0.97	2.61	19	268.6%

The prices charged for the MSG and LPG medicines in the private sector were 54% and 22% higher respectively than the prices in the public sector (Table IV). The public sector has lower patient prices than the private sector in general though Glibenclamide and Hydrochlorothiazide were cheaper in the private sector than in the public sector.

Table IV: Medicines prices in the public and private sectors.

	Public Sector MPR (n=8)	Private Sector MPR (n=27)	No. of medicines in both sectors	Ratio private to public
Most sold generic equivalent	2.57	3.72	12	154.0%
Lowest price generic equivalent	2.89	3.44	25	122.3%

The prices charged for the least priced generic medicines in the dispensing doctors sector were 155% higher than the public sector medicine prices (Table V).

Table V: Comparison of medicine prices between dispensing doctors and public sectors.

	Public Sector MPR (n=8)	Disp. Doctors Sector MPR (n=23)	No. of medicines in both sectors	Ratio Disp. Doctors to public
Most sold generic equivalent	3.06	13.28	10	433.2%
Lowest price generic equivalent	3.17	8.09	24	255.1%

The Zimbabwean public procurement agency, NatPharm, on average procures medicines for 13 US cents more than the average prices from eight African countries (including Zimbabwe). The public sector patient prices in Zimbabwe are, on average, 78 US cents more than the median prices in eight African

countries. The prices of medicines in Zimbabwe are higher than prices charged in other African countries (Table VI). However, the prices of medicines sold in the private sector were on average slightly less than the average, prices in the other African countries that participated in the study.

Table VI: Comparisons of medicine prices with prices in other African countries.

Sector	Zimbabwe MPRs	Average prices in 8 African countries (25^{th}-75^{th} Percentile)
Public procurement LPG	0.99	0.86 (0.65-1.16)
Public sector patient LPG	2.89	2.11 (1.25-2.78)
Private pharmacy patient LPG	3.44	3.56 (3.04-4.41)

Discussion

The study results confirm that prices of medicines in Zimbabwe are high. Medicine prices were highest in the dispensing doctors sector. The finding that some generic products were being sold for over 20 times the IRP is disturbing and raises questions about the way medicines are priced in the country. This may be indicative of the arbitrary nature of the setting of prices of medicines in the country.

There are large medicine price differences between the public, private retail pharmacies and dispensing doctors sectors with the public sector having relatively lower prices. The public sector hospitals charge lower prices to patients for the majority of the medicines studied. In the private sector, even the cheapest generic medicines cost 22.3% more than the prices paid by patients in the public sector. Given the limited availability of medicines in the public sector institutions, many patients are forced to buy their medicines from the private sector institutions which are pricier. This is a common finding in poor countries with poorly regulated pharmaceutical sectors.

The prices of innovator brands in the private sector was very high *vis-à-vis* the prices of generic equivalent medicines (a very high brand premium). The prices of innovator brand products were, on average, three times the price of generic medicines in the private sector. This finding supports the need for accelerated generic competition.

Public procurement by NatPharm through the international competitive tender system allows the country to purchase medicines at relatively low prices on the international market compared to prices for the private sector. The support exchange rate offered to NatPharm by the government for procurement of drugs has also contributed to the low procurement prices *vis-à-vis* the other sectors in the country. More competitive prices can be obtained through bulk purchases (pooled procurement). This can be achieved if Natpharm could be more involved in the supply and distribution of essential medicines for the private sector as well as the public sector, than is currently taking place at the moment. However, comparison of Zimbabwe public procurement prices with other African countries revealed that the country, on average, pays more for drugs than other African countries. This situation cannot be allowed to continue.

There were minor price differences between generic medicines (i.e. MSG and LPG medicines) in all the sectors surveyed. The minor differences between these types of medicines may indicate the existence of generic competition which is a positive development. The availability of more generic products on the market will help curb price increases.

Routine price monitoring (i.e. quarterly price surveys) should be conducted in Zimbabwe, given that better information on price, prices differences and factors contributing to the final cost of a medicine are essential if the country is to find ways of making medicines more affordable.[6]

Our study had several potential limitations. First, the survey gives only a snapshot of the medicine price situation in the country and does not provide information on the trends of these prices over time.

Second, the study used the official exchange rate of the Zimbabwean dollar to the US dollar. At the time of the study, the official exchange rate of $5 616.16 to one US dollar was just 10% lower than the parallel market exchange rate which gives a more market related value of the currency given the distortions in the valuing of the local currency. This may have had an effect of increasing the US dollar prices of medicines in Zimbabwe. Given that it was applied across the board, this did not have an effect on internal comparisons.

Third, the use of MSH IRP in comparing retail prices was not comparing like with like. The MSH reference prices are the medians of recent procurement or tender prices offered by not-for-profit suppliers to developing countries for multi-source products. The use of IRP did not affect inter-country price comparisons and international comparisons as all the other countries used the same reference prices.

Fourth, the study examined 42 mostly used medicines in the country. Analysing these medicines may have introduced bias because the most commonly used medicines may represent those with lower prices. However, the medications used in the study are similar to the most prescribed medications in Zimbabwe.

Conclusion

The prices paid by people for medicines in Zimbabwe are high. Concerted measures and steps are urgently

needed in order to improve access to and affordability of essential medicines for all.

Acknowledgements

The permission to undertake this survey was given by the Ministry of Health and Child Welfare (MOH & CW). The study was financially supported by the European Union (Health) and World Health Organisation/Health Action International. World Health Organisation/Health Action International also provided technical support to the study.

References

1. Lauridsen E. Address on the national workshop on drug policy and management. Victoria falls, 5-15 April 1987, Zimbabwe.
2. Noyce PR, Huttin C, Atella V, Brenner G, Haaijer-Ruskamp FM, Hedvall MB, *et al.* The cost of prescription medicines to patients. *Health Policy* (2000);52:129-45.
3. World Health Organisation/World Trade Organization. Background paper for the WHO-WTO Secretariat on differential pricing and financing of essential drugs. Norway, Hosbjor, 8-11 April 2001 (www.who.int/medicines/docs/pagespublications/doclist.htm, accessed on 9/09/05).
4. Bonnarens JK. The consumer price index and prescription drug prices: is there a relationship? *J Res Pharmaceutical Economics* (1998);9:71-81.
5. Ministry of Health and Child Welfare. Public Sector Survey, 2000. Harare: Ministry of Health and Child Welfare. 2000.
6. World Health Organisation/ Health Action International. Medicines prices: a new approach to measurement. 2003 ed. *WHO/EDM/PAR/2003.2,* Geneva.
7. Ministry of Health and Child Welfare. Zimbabwe Medicines Survey 2004. Harare: Ministry of Health and Child Welfare. 2005.
8. Ministry of Health and Child Welfare. Essential drugs list of Zimbabwe. 4th ed. Harare, 2004.
9. Medicines Control Authority of Zimbabwe. Listing of approved licensed premises. Harare: Medicines Control Authority. 2004.